

SOLAR DECATHLON 2007

Request for Proposals

Issue Date: October 6, 2005

Due date: December 2, 2005 4pm (Mountain time)

Technical Questions must be received in writing no later than October 31, 2005

(Please submit technical questions to Jeffrey_Soltesz@nrel.gov)

This Request for Proposals (RFP) includes this main document and several attachments, including instructions for completing a proposal, several documents that are required with submission of the proposal, and a statement of work that describes the work to be performed by successful bidders to this solicitation. Please review the entire document, including attachments to respond thoroughly to the solicitation.

Introduction

The National Renewable Energy Laboratory (NREL) in support of the U.S. Department of Energy (DOE) invites your submission to participate in the 2007 Solar Decathlon, including the development of building-integrated photovoltaics (BIPV), in accordance with the requirements and conditions set forth herein.

The Solar Decathlon is a key strategy to achieve an important goal for NREL and DOE, namely, to foster development and facilitate widespread adoption of BIPV, resulting in solar-powered homes that demonstrate solar technologies in marketable applications, through technology development and key partnerships.

The Solar Decathlon is an international competition open to all accredited colleges, universities, and other post-secondary educational institutions. Student teams compete to design, build, and operate highly energy-efficient, completely solar-powered houses that incorporate BIPV. The entire Solar Decathlon project encompasses not only the competition, but also the project's design development, construction, and commissioning phases necessary to participate in the competition. Hence, the competition itself is only one of several requirements associated with participation in the project.

The next Solar Decathlon will take place in Washington, D.C., in 2007. (Previous events were held in fall 2002 and 2005.) This solicitation is for participation in the 2007 Solar Decathlon only. NREL, in support of DOE, expects to hold future competitions in alternate years, concluding with an event in 2015.

For the student competitors, the project is designed to increase education about BIPV and energy-efficient building design, and to accelerate solar energy R&D. The competition fosters collaborations among students in the disciplines of architecture, engineering, business and marketing, and communications at the outset of their careers to achieve the

goal of developing and demonstrating solar technologies in marketable residential applications. Like the athletic decathlon, the Solar Decathlon will test proficiency in a wide range of skills. Unlike its athletic counterpart, however, the Solar Decathlon is a team event, in which the diversity of abilities comes from the composition of the team rather than a single individual.

The Solar Decathlon is also a public event designed to increase awareness about energy for residential use and transportation. The competition demonstrates that a beautifully and well-designed house can generate enough electricity to meet the needs of a household and home-based business, including electricity for lighting, cooking, washing clothes and dishes, powering home and home-business electronics, maintaining a comfortable indoor temperature and air quality, and powering an electric car. The Solar Decathlon shows the nation and the world that clean and plentiful sources of energy—solar energy—can provide the power for healthy places in which to live, work, and play.

A critical long-range outcome of the Solar Decathlon project is the development and demonstration of solar-powered homes in which, by the year 2015, the whole-house, levelized energy cost has been reduced to \$0.10/kWh, while complying with the criteria associated with the ten contests that comprise the competition. NREL, in support of DOE, is soliciting proposals from post-secondary educational institutions for entries that not only consider participation in the competition but also include a research and development (R&D) component that meets this critical outcome.

The available funding is not expected to cover the entire expense of this project, and as specified in Attachment A, Fund Raising and Team Support are a part of the evaluation criteria. This criteria also states that industry involvement will be considered however, it should be noted that such involvement shall be collaborative and is not intended to be a lower-tier subcontract.

The 2005 Solar Decathlon Rules and Regulations document is available at <http://www.solardecathlon.org>. The 2005 document is the basis for the 2007 competition, though it will be revised prior to the 2007 event.

Specific instructions for responding to this solicitation follow. A Statement of Work is attached (Attachment E), which describes the work to be performed by successful offerors to this solicitation over the course of the two-year (Phase I and Phase II) period of performance. Proposals shall address the criteria described in Attachment A, Evaluation and Selection Process, and demonstrate a team's capacity to perform the work described in the statement of work.

Instructions

A complete proposal is due December 2, 2005, and shall include

- 1) One completed Registration Form For Entry for each School that is part of a team (Attachment B) –
- 2) Eight (8) copies of a signed technical proposal (see Attachments A & C)
- 3) One signed School Participation And Release Agreement (Attachment D)
- 4) One completed and signed original of the Representations and Certifications form (Download form from:
http://www.nrel.gov/business_opportunities/related_docs.html)
- 5) Eight (8) copies of a completed price proposal form, one for each phase.
(Download form from:
http://www.nrel.gov/business_opportunities/related_docs.html)
- 6) A cover letter including a summary statement indicating acceptance of the proposed Statement of Work or any changes with reason. The cover letter shall also include a summary of deviations/exceptions (if any) to the Sample Subcontract (Attachment F), the terms and conditions in Appendix B (Attachment G), and the terms and conditions in Appendix C-2 (Attachment H). Exceptions to the School Participation and Release Agreement are not encouraged and will be reviewed only in the event of clearly demonstrated conflict with applicable law. The offeror shall explain any exceptions (including deviations and conditional assumptions) taken with respect to the subcontract schedule and terms and conditions. Any exception must contain sufficient amplification and justification to permit evaluation. Such exceptions will not, of themselves, automatically cause an offeror to be termed unacceptable. A large number of exceptions or one or more significant exceptions not providing any obvious benefit to NREL (or DOE) may, however, result in rejection of such offer as unacceptable.

The maximum funded amount is \$50,000 for each Phase and it is anticipated that costs will be largely for labor and other direct costs. Note: Equipment or personal property purchases are not to be included as part of the price submitted under this request for proposals.

The technical proposal, price proposal, Representations and Certifications form, Registration form and the School Participation and Release Agreement are to be signed by an authorized official of the educational institution. If two or more institutions collaborate and submit one proposal, **an authorized official from each institution** shall sign the technical proposal, price proposal, complete and sign the Representations and Certifications form, and the School Participation and Release Agreement. Faxed proposals and proposals sent by e-mail will NOT be accepted.

The technical proposal, price proposal, Representations and Certifications form, School Participation and Release Agreement, completed Registration form, and cover letter should be sent to:

National Renewable Energy Laboratory (NREL)
Attention: *Jeffrey Soltesz, MS 1735*
1617 Cole Boulevard
Golden, CO 80401-3393 USA
Phone: 303/384-7409
Fax: 303/384-7397
Email: Jeffrey_Soltesz@nrel.gov

To facilitate handling, please mark the following on the outside of the envelope containing your proposal or other related information:

Solar Decathlon Proposal
TO BE OPENED BY ADDRESSEE ONLY

Late Proposals, Modifications, and Withdrawal of Proposals

Proposals, or modifications to them, received from qualified organizations after the latest date specified for receipt may be considered, and NREL determines that there is a potential technical, or other advantage, as compared to the other offers received. However, depending on the circumstances surrounding the late submission or modification, NREL may consider a late offer to be an indication of the offeror's performance capabilities, resulting in downgrading of the offer by NREL evaluators in the technical evaluation process. Offers may be withdrawn by written notice or telegram (including mailgram) received at any time before award. Offers may be withdrawn in person by an offeror or an authorized representative, if the representative's identity is made known and the representative signs a receipt for the offer before award. **Faxed proposals and proposals sent by e-mail will NOT be accepted.**

In the event that NREL is not able to successfully negotiate or sustain a total of 20 awards under this RFP, NREL reserves the right to re-issue the solicitation after December 2, 2005. In response to a re-issued RFP, NREL will accept and evaluate proposals submitted from institutions that did not respond to the original RFP. Institutions that submitted proposals under this original solicitation will be excluded from submitting new or supplemental proposals, however, any prior proposal that was determined by NREL to be in the competitive range under the original solicitation, but did not receive a subcontract award under this RFP, will undergo further consideration under the re-issued RFP.

Award Type

It is the intent of NREL to award up to twenty (20) firm fixed price Subcontracts with a base year (Phase I), and a second year (Phase II). The funding will be split equally with \$50,000 in Phase I, and \$50,000 in Phase II. At the completion of the subcontract's Phase I, NREL will make a unilateral decision regarding whether to fund a project for Phase II. The decision will be made based on: (a) technical merit and responsiveness of the deliverables under Phase I; and (b) availability of funds.

Attachment A: Evaluation and Selection Process
Attachment B: Registration Form for Entry
Attachment C: Technical Proposal Format Guide
Attachment D: School Participation And Release Agreement
Attachment E: Statement of Work
Attachment F: Sample Subcontract
Attachment G: Appendix B Terms and Conditions
Appendix C-2 Intellectual Property Provisions – available on website
http://www.nrel.gov/business_opportunities/related_docs.html

ATTACHMENT A

Evaluation and Selection Process

The proposal will be limited to 25 pages, including any diagrams, charts, or appendices. A format guide (Attachment C) has been included to help you with this process. Your proposal must be received **no later than 4:00 P.M. Mountain time, December 2, 2005 to ensure acceptance**. Late proposals may be accepted at the discretion of NREL, see page 4 - Late Proposals, Modifications, and Withdrawal of Proposals.

All proposals will be judged on a competitive basis, in two stages:

Step One—Initial Evaluation

An initial evaluation will be performed to determine if all required information (i.e., received from a qualified educational institution, contain all required documentation, etc.) has been provided for an acceptable offer. Offerors may be contacted only for clarification purposes during the initial evaluation. Offerors shall be notified if their offer is determined unacceptable and the reasons for rejection will be provided. Unacceptable offers will be excluded from further consideration.

Step Two—Discussion, Selection, Negotiation, and Award

Proposals found to meet those requirements will be evaluated to determine which teams have the most promising approach to and potential for building a successful Solar Decathlon entry. All acceptable offers will be evaluated against the qualitative merit criteria listed below. Based on this evaluation, NREL has the option, depending on the specific circumstances of the offers received, to use one of the following methods of selection:

- (a) make an individual selection, conduct negotiations, and make an award;
- (b) conduct parallel negotiations with all offerors and make award(s);
- (c) conduct discussions with all offerors, select successful finalists, conduct parallel negotiations with successful finalists, and then make award(s);
- (d) conduct discussions with all offerors, conduct parallel negotiations with the finalists, select successful finalist(s), and then make award(s);
- (e) select successful finalists, conduct successive negotiations, and make successive selections and awards;
- (f) make no award(s).
- (g) re-issue the solicitation and consider new proposals from institutions that did not propose under this original RFP and prior proposals from institutions that were otherwise rated in the competitive range but were not awarded a subcontract under this original RFP .

Evaluation Criteria for Selection

The Statement of Work (Attachment E) in this RFP serves as NREL's baseline requirement that must be met by each offeror.

The evaluation criteria establish what NREL considers the factors valuable in an offer. These qualitative merit criteria are performance-based and permit selection of the offer that provides higher qualitative merit.

- 40% **Technical Innovation and Design**—The conceptual design of the Solar Decathlon entry addresses aesthetics, feasibility of the design, scientific/technical quality, soundness of the analyses, trade-offs, and design approach. Advancing technology of BIPV is addressed. The selected components and materials are adequate, and the entry will be a completely or substantially new project. Environmental, safety, and health considerations are addressed for the construction and competition phases of the Solar Decathlon, including assembly and disassembly in Washington D.C. Multidisciplinary teaming (e.g., between design, communications, and engineering disciplines) is strongly encouraged.
- 30% **Fund Raising and Team Support**—The proposal gives a clear understanding of the costs associated with the project and the need for fund raising. Fund raising has been adequately planned. The level of available or obtainable equipment, instrumentation, and facilities is adequate. Industry involvement in the project is considered.
- 15% **Organization and Project Planning**—The proposal gives a clear understanding of all the activities involved in the project. The activities are planned and organized adequately to ensure successful completion. The organization chart and timeline exhibit good planning. How and who will make decisions and how conflicts will be resolved are adequately addressed. How the house will be transported to the competition, assembled and disassembled are addressed. The project business model addresses the levelized energy cost goal of \$0.10/kWh by 2015.
- 15% **Curriculum Integration and Special Considerations**—The institution(s) plans to maximize the educational benefits of the project. The Solar Decathlon project is integrated into the students' course work. The Solar Decathlon project incorporates special considerations that deserve extra merit, such as technical innovation and creativity, or new ideas that will make the project more likely to succeed.

Other Considerations

Finally, other factors such as geographic diversity and technology diversity will be considered for the benefit of the program.

These evaluation criteria are listed in order of importance. Technical reviewers will base their conclusions only on information contained in the proposals. It cannot be assumed that reviewers are acquainted with the institutions or key individuals or any of their prior work or accomplishments.

**ATTACHMENT B
REGISTRATION FORM FOR ENTRY**

Solar Decathlon

(Please print)

DATE _____

SCHOOL NAME _____

SCHOOL ADDRESS _____

CITY, STATE, ZIPCODE _____

PHONE NUMBER _____

KEY FACULTY CONTACT _____

CONTACT ADDRESS _____

CITY, STATE, ZIPCODE _____

PHONE NUMBER _____

FAX NUMBER _____

E-MAIL ADDRESS _____

KEY STUDENT CONTACT _____

CONTACT ADDRESS _____

CITY, STATE, ZIPCODE _____

PHONE NUMBER _____

FAX NUMBER _____

E-MAIL ADDRESS _____

LIST OTHER PARTICIPATING SCHOOLS IF APPLICABLE:

PREFERRED TEAM NAME: _____

COMPLETE THIS FORM (one for each SCHOOL on each team) AND SUBMIT WITH PROPOSAL BY December 2, 2005. If multiple schools are on one team, indicate the Lead School and the Lead Faculty contact each with an Asterisk (*)

ATTACHMENT C

Technical Proposal Format Guide

The following are necessary elements of your proposal. Please note that the page limit, including appendices, is 25 pages:

COVER PAGE

The cover page shall include the signature of an authorized official of each participating institution.

TABLE OF CONTENTS

INTRODUCTION

The introduction or summary should be presented first and should provide a brief overview of your entire proposal.

TECHNICAL INNOVATION AND DESIGN

This section should provide a clear technical discussion of design considerations, a proposed approach to technological advancements in BIPV, and trade-offs for your building and associated energy systems, as well as the scientific/technical analyses of the proposed design, including selected components and materials. This section should also address safety aspects of the project, particularly during the construction, assembly and disassembly phases, and the environmental impacts of the project.

FUND RAISING AND TEAM SUPPORT

This section should provide a clear understanding of the costs associated with the project and the need for fund raising, how that fund raising is planned, and whether there are available or obtainable equipment, instrumentation, and facilities.

ORGANIZATION AND PROJECT PLANNING

This section should provide a clear discussion of all of the activities involved in the project, as well as their planned implementation and organization to ensure successful completion. Issues and opportunities associated with the multidisciplinary aspects of the project (e.g., in the case where different departments or institutions are involved) should be described.

CURRICULUM INTEGRATION AND SPECIAL CONSIDERATIONS

This section should describe how the school(s) plans to maximize the educational benefits of the project and how the solar decathlon project will be integrated into the students' course work. This section should include any other considerations that may make your team especially suited for participation in this competition.

CONCLUSIONS

This section should justify, based on the presentations of the other sections, your team's selection for participation in the Solar Decathlon and the award of \$50,000/year for two one year phases, to be used to support the completion of the deliverables.

APPENDICES

As appropriate, include supplemental information such as resumes of team members, letters of support, and tables of supporting data.

General notes for proposal preparation:

Note that these are **recommendations**, provided with the intent to make the preparation process easier for the proposing institutions and the review process easier for the evaluation panel. The evaluation criteria are keyed to the Proposal Format Guide.

While the appearance of a proposal is important, the emphasis should be placed on the content and the proposal organization. With good logic, proper English sentences, and correctly spelled words, the reviewers can quickly understand your discussion and avoid any misunderstandings.

Proposals should be clean, bound copies reproduced clearly from an original. A cover printed on thick cover stock is preferred, as is spiral, perfect, or similar binding. The cover page will not be counted as part of the 25-page maximum. Top, bottom, and side margins should be one inch excluding headers, footers, and page numbers. Main headings should be in all uppercase letters and boldfaced. Subheadings should be in initial caps (first letter of each word capitalized) and boldfaced. Third-level headings should be avoided. All units of measure should be given in English and SI (metric) values. All artwork should be clean and legible.

The Registration form (**Attachment B**) will not be counted as part of the 25-page maximum. This form should not be in the bound proposal. One completed and signed original for each School should be sent with your bound proposals.

The School Participation and Release Agreement form (**Attachment D**) will not be counted as part of the 25-page maximum. This form should not be in the bound proposal. One completed and signed original for each School should be stapled and sent with your bound proposals.

The Representations and Certifications form will not be counted as part of the 25-page maximum. This form should not be in the bound proposal. One completed and signed original for each School should be stapled and sent with your bound proposals.

The Price Proposal form will not be counted as part of the 25-page maximum. This form should not be in the bound proposal. Eight copies should be sent with your bound proposals.

ATTACHMENT D

School Participation and Release Agreement September 27, 2005

The National Renewable Energy Laboratory (NREL) and the U.S. Department of Energy (DOE) are sponsoring a competition entitled Solar Decathlon, a university competition to design, build, and operate solar-powered houses. As of September 27, 2005, AIA, NAHB, DIY Network, Sprint, and BP are also sponsors of the 2007 Solar Decathlon. From time to time and up to the culmination of the 2007 Solar Decathlon, other organizations may join and shall be included as sponsors. All organizations, both identified and to be identified, constitute and are hereinafter collectively referred to as "Sponsors" and "Released Parties".

The Solar Decathlon will be held in 2007 in Washington, D.C. ("Event"). The Event includes the SCHOOL designing, building, and testing a solar building, and participating in preliminary activities such as building performance modeling, design, construction, instrumentation, data collection, and the acquisition and operation of an electric car prior to the Event. Up to 20 collegiate teams will participate in the approximate three-week long Solar Decathlon in Washington D.C. To compete for entry into the Solar Decathlon, the SCHOOL agrees to prepare a proposal and submit reports detailing how the SCHOOL will design, build, test, and compete with a solar-powered house and an electric car in the Solar Decathlon. The electric vehicle course will include state and federal highways. Strict adherence to all traffic regulations is required.

The SCHOOL agrees that NREL or DOE or the currently identified sponsors: AIA, NAHB, DIY Network, Sprint, BP, or any other sponsors to be identified, collectively, Sponsors, shall NOT be liable to the SCHOOL in any manner, or for any delay in the Solar Decathlon, or in the event that the Solar Decathlon is not held.

Rules

The SCHOOL agrees to abide by the rules established for the Event. A copy of such rules is available at <http://www.solardecathlon.org>, entitled, 2005 Solar Decathlon Rules and Regulations dated November 2, 2004. Further, the SCHOOL agrees to abide by subsequent, revised rules made applicable to the 2007 Solar Decathlon.

Release of Liability

The SCHOOL hereby releases NREL, its parent the Midwest Research Institute, the United States Government, and any other Event sponsor (either identified or to be identified), their respective officers, directors, employees, agents, contractors, subcontractors, and representatives (the "Released Parties") from any and all claims, losses, expenses, and demands, including those resulting from injury or death to any person or damage to any property, arising from the SCHOOL's work on or participation in the Event or any activities incidental thereto.

In addition, before the commencement of the Solar Decathlon, the SCHOOL shall secure from each of the SCHOOL's participants prior to the participant's commencement of activities related to the Solar Decathlon, a signed written "Release and Waiver of Liability--Assumption of Risk and Indemnity Agreement" ("Participant's Release"), that

releases the Released Parties from any and all claims, losses, expenses, and demands, including those resulting from injury or death to any person or damage to any property, arising from the participant's work on or participation in the Event or any activities incidental thereto. The SCHOOL shall submit the signed forms to NREL for all of its participants upon the acceptance of the SCHOOL's proposal, to be fully supplemented prior to the commencement of travel to the Event, and will retain the originals of such signed releases for a period of three (3) years, and will make them available to NREL upon request. The SCHOOL warrants that each Participant's Release that is submitted is valid and enforceable and the SCHOOL will defend and hold harmless the Released Parties for any claims and liabilities arising from its participant's involvement in the Event.

Vehicular, General, Workers' Compensation, and Employer's Liability Insurance

The SCHOOL, at the SCHOOL's expense, shall maintain for the duration of the Event, vehicular liability insurance with limits of liability for bodily injury of not less than US \$200,000.00 for each person and US \$500,000.00 for each occurrence; and limits of liability for property damage of not less than US \$40,000.00 for each accident and US \$500,000.00 for each occurrence. The Released Parties shall be named as Additional Insureds on all such insurance.

The SCHOOL, at the SCHOOL's expense, shall maintain for the duration of the Event, general liability insurance with limits of liability for bodily injury of not less than US \$500,000.00 for each person and US \$500,000.00 for each occurrence; and limits of liability for property damage of not less than US \$100,000.00. The Released Parties shall be named as Additional Insureds on all such insurance.

The SCHOOL, at the SCHOOL's expense, shall maintain for the duration of the Event, workers' compensation insurance with limits of liability as required by applicable law; and employer's liability insurance for liability for bodily injury of not less than US \$100,000.00 for each person and US \$100,000.00 for each occurrence. To the extent permitted by applicable law, the Released Parties shall be named as Additional Insureds on all such insurance.

The SCHOOL agrees to furnish NREL, upon acceptance of its proposal, evidence satisfactory to NREL of such vehicular liability, general liability, workers' compensation liability, or employer's liability insurance coverage.

Indemnification

To the extent permitted under applicable law, the SCHOOL hereby indemnifies and holds harmless the Released Parties from any and all damages, claims, losses, expenses, and demands, including court and counsel fees, for any injury or death of any person or damage to any property, arising out of or in any way connected with the SCHOOL's officers, agents, or employees' work on or participation in the Event or any activities incidental thereto.

It shall be the SCHOOL's duty, at the SCHOOL's expense, to comply with all Federal, State, and Local laws, ordinances, and regulations, if any, applicable to the work to be done hereunder and before starting work. To the extent permitted under applicable law,

the SCHOOL shall hold harmless the Released Parties from all damages of any nature whatsoever that result from SCHOOL's failure to comply with such laws, ordinances, and regulations.

The SCHOOL shall assume full responsibility for all students, officers, agents, or employees of the SCHOOL working on or participating in the Event and, subject to applicable law, shall indemnify and hold harmless the Released Parties from all liability and expenses, including court and counsel fees, on account of negligence or willful acts or omissions of the SCHOOL's students, officers, agents, or employees arising out of:

- (a) Accidents or injuries to the SCHOOL's students, officers, agents, or employees; or damage to the property of any of them; and
- (b) Accidents or injuries to others or damage to the property of others (including the Released Parties).

If requested, the SCHOOL shall assume, at the SCHOOL's own expense, the defense of suits that may be instituted against the Released Parties on account of the SCHOOL's failure to conform to laws as herein required.

The SCHOOL further agrees that if the Released Parties should legally incur costs whatsoever under the applicable workers' compensation laws by reason of the SCHOOL's students, officers, agents, or employees' injury or death while working on or participating in the Event, the SCHOOL will indemnify and hold harmless the Released Parties for such costs which the Released Parties may legally be required to pay the students, officers, agents, or employees of the SCHOOL.

Consent to United States Courts Jurisdiction, venue, and governing law

The SCHOOL, regardless of domestic or foreign domicile, consents to jurisdiction of the United States Courts and further agrees to comply with the terms of the Disputes Clause, including venue and governing law, hereby incorporated by reference and specified in the planned, resultant subcontract between NREL and the SCHOOL (regardless of actual execution of such subcontract between the parties).

Relationship of the Parties

The SCHOOL and Released Parties are independent contracting parties, and nothing contained in this School Participation and Release Agreement shall be deemed to create a partnership, joint venture, or agency relationship between them, nor does it grant any party any authority to assume or create any obligation on behalf of or in the name of the other. This provision does not impair any benefit that the Released Parties may have under applicable workers' compensation laws or under the insurance coverage that the SCHOOL is required to obtain.

Entire Agreement

This Agreement constitutes the entire agreement between the SCHOOL, NREL, the United States Government, and any other Event sponsor relating to the subject matter covered herein and cancels and supersedes all previous agreements between the parties

relating to the subject matter contained herein. Any modification to this Agreement must be in writing and signed by the SCHOOL and NREL.

FOR THE SCHOOL TO BE CONSIDERED FOR ENTRY IN SOLAR DECATHLON, EACH PARTICIPATING SCHOOL SHALL SIGN THIS AGREEMENT AND RETURN ONE (1) SIGNED COPY OF THIS AGREEMENT WITH THE SCHOOL'S PROPOSAL BY December 2, 2005.

The provisions, terms, and conditions for entering and participating in the Solar Decathlon (Event) are acknowledged and accepted on this date.

Printed name of SCHOOL

Signature of SCHOOL Officer

Date

Printed Name of SCHOOL Officer

Title of SCHOOL Officer

Return one (1) signed copy with the SCHOOL's Solar Decathlon Proposal

NOTE: Include identical signature data for EACH SCHOOL participating under a submitted proposal.

ATTACHMENT E
Statement of Work
Solar Decathlon 2007

Date: October 6, 2005

Background

The Solar Decathlon is an international collegiate competition in which Student teams compete to design, build, and operate highly energy-efficient, completely solar-powered houses that incorporate building-integrated photovoltaics (BIPV). Solar Decathlon houses are nominally 500-square-foot modular structures. No basements are allowed, and the house must not disturb the ground on which it sits. The energy source for the house will be limited to only the renewable energy incident upon the specified space that the house will occupy during the competition. No other pre-stored form of energy or fuel is allowed.

The next Solar Decathlon will take place in Washington, D.C., in 2007. Previous events were held in fall 2002 and 2005. The 2005 Solar Decathlon Rules and Regulations document, which is the basis for the 2007 competition, (though it will be revised prior to the 2007 event) is available at <http://www.solardecathlon.org>.

Whereas the competition will be held in fall 2007, each team is required to meet a number of pre-competition deliverables associated with project fund raising, building design and modeling, and materials specification, acquisition, and construction processes.

Objective

The objective of the Solar Decathlon project is the development and demonstration of solar-powered homes that incorporate BIPV, in which, by the year 2015, the whole-house levelized energy cost has been reduced to \$0.10/kWh, while complying with the criteria associated with the 10 contests that comprise the competition.

Scope of work

The challenge to the teams competing in the 2007 Solar Decathlon is to design and build an attractive, solar-powered, zero-energy grid-tied house with modern amenities that will cost no more than \$0.10/kWh to power in the year 2015. In addition to the competition, the project encompasses the solar home's design development, construction, and commissioning phases necessary to participate in the competition.

Teams shall describe, via detailed economic and energy analyses, how their houses will meet the \$0.10/kWh levelized energy cost (LEC) target. A full financial cash-flow model shall be used to take into account all the parameters that differ from those of a conventional house. Teams may use a variety of approaches to reduce the levelized energy cost of residential PV electricity from current levels to the target level by 2015.

To accomplish the goals of the subcontract, teams shall complete the following tasks:

Tasks

Project Reports

During the period of performance, teams are required to submit a business/fundraising plan, four Project Reports, and an Energy Analysis and Economic Analysis final report. Project Reports shall contain the following components:

- *Project Narrative*: The narrative is the story of the project to date, in narrative form. Projects are works-in-progress; after the first project narrative submission, teams should update previous information.
- *Team Information*: A description of how each team is organized and approximately how many students, faculty, and others (e.g. sponsors, volunteers, family members) are involved in each project.
- *Web Site URL*: Teams must submit a URL of their Web site.

The following components shall be included in selected Project Reports:

- *Energy Analysis*: This report shall summarize the results of computer simulations created by teams to analyze the design process and project the energy performance of their houses after the designs are complete.
- *Economic Analysis*: This report shall summarize the results of the economic analysis done by teams to determine the levelized cost of energy of their houses. A report detailing the costs of all house components shall also be included.
- *Safety Plan*: The purpose of the Safety Plan is to identify the hazards of the activities and state the related controls to mitigate risk to the lowest reasonable level.
- *Arrival and Departure Plan*: The teams' Arrival and Departure Plans will be reviewed for internal consistency and for possible site conflicts between teams. For example, a team may need to drive across a neighboring team's lot while unloading a house section—this could impact a team's ability to begin placing their house section or to start building. A detailed arrival and departure schedule will be developed based on the information submitted by the teams.
- *Meal Plan*: Teams shall submit a proposed meal plan in preparation for the cooking contest activity. The meal plan will be evaluated prior to the competition.

Drawings and Specifications

On three separate occasions, teams shall submit drawings and specifications documenting the house and its components. The drawings and specifications are continual works-in-progress that culminate in the as-built submittal, which is judged for points in the competition. The competition organizers use the drawings and submittals to determine constructability, system operational parameters and requirements, Rules and Regulations compliance, and code and design standards compliance.

Event Participation

Teams shall participate in the Solar Decathlon competition and all other elements of the Solar Decathlon event. The following is a list of **approximate** dates of key activities comprising the event. **Actual dates may vary.** The expected range of dates is within September-October 2007, and exact dates will be determined closer to the event:

- September 13-16, 2007: House assembly
- September 17-19, 2007: House shakedown and inspections
- September 20, 2007: Opening ceremonies
- September 21-30, 2007: The competition and public tours
- October 1-3, 2007: House disassembly

Review meetings

The following review meetings will take place during the period of performance:

- January 25, 2006 (tentative): Orientation video conference
- January 5-6, 2007 (tentative): In-person progress meeting, possibly held in conjunction with the annual review of the National Photovoltaics Program
- March 2006-September 2007: Monthly conference calls

In addition to the group meetings listed above, meetings may be arranged with individual teams at various times throughout the period of performance.

Schedule of deliverables

Deliverable	Due Date (tentative)
Phase 1:	
Business/Fundraising Plan	March 2006
Project Report #1	
Design Development Drawings and Specifications, including preliminary energy and economic analysis	June 13, 2006
Final Energy Analysis and Economic Analysis	November 30, 2006
Phase 2:	
Project Report #2	
Construction Drawings and Specifications	March 6, 2007

Project Report #3	August 7, 2007
As-Built Drawings and Specifications	
House operation in Solar Decathlon competition	Sept. 13-Oct. 3, 2007
Final Project Report	January 9, 2008

Electronic Reporting Requirements for Subcontract Report Deliverables:

As set forth in Department of Energy Order 241.1A, NREL is required to submit in an electronic format all scientific and technical information, including subcontract report deliverables intended for public distribution, to the DOE Office of Scientific and Technical Information (OSTI). In addition, it is NREL's intention to post subcontract report deliverables containing publicly available information (e.g. non-confidential, non-protected, non-proprietary information) for distribution on the NREL Intranet or the Internet.

The Subcontractor shall provide the final approved version of report deliverables intended for public distribution as specified in the deliverables schedule of this Statement of Work in accordance with the following electronic reporting requirements:

- a. The Subcontractor shall submit all report deliverables intended for public distribution (including status, annual, or final reports) as electronic files, preferably with all graphics and images embedded within the document. The electronic files shall be submitted along with an accompanying hard (printed) copy(ies) of the report. Limited exceptions allowing some graphics and images to be submitted as hard copies only may be granted on a case-by-case basis. The exceptions process for graphics and images is described in Paragraph E below. It shall be made clear in the deliverable transmittal letter that certain graphics and images are supplied in hard copy only.
- b. All final approved version submissions shall be delivered to NREL on PC or MAC-formatted media (3.5 inch disks, Zip and Jaz cartridges, or CD-ROM). Files of 1 Mb or less can be sent via e-mail to the 1) NREL technical monitor, 2) the NREL Subcontract Administrator or Associate (as specified in the Statement of Work).
- c. The preferred format is a single electronic file that includes all of the text, figures, illustrations, and high-resolution digital photographs (or photographs should be scanned and incorporated in the text). Acceptable file formats are:
 - Microsoft Word (v.6.0 or newer for PC or MAC)
 - WordPerfect (v.6.1 or newer for PC)
 - Microsoft PowerPoint
 - Microsoft Excel

d. If it is not possible to include all of the graphics and images (figures, illustrations, and photographs) in the same file as the text, NREL will accept the text in one of the above formats and the graphics and images as separate electronic graphic or image files*. The native files for any page layout formats submitted shall be supplied. The following software is supported on both Mac and PC platforms:

- QuarkXPress (.qxd)
- Photoshop (.psd)
- Freehand (.fh)
- Framemaker (.fm)
- Pagemaker (.pm)
- Illustrator (.ai)
- Corel Draw (.cdr)
- Microsoft Publisher(.pub)

*The acceptable graphic or image file formats are: .eps, .tif, .gif, .jpg, .wpg, .wmf, .pct, .png, .bmp, .psd, .ai, .fh, .cdr. The preferred resolution for graphics or images is 150 to 300 dpi. Include all fonts that were used in creating the file.

e. In the rare case that the graphics or images cannot be supplied electronically, either incorporated within the text or as a separate electronic file, original hard copies will be accepted. The Subcontractor shall obtain prior approval from the Subcontract Administrator before submitting graphics or images in hard copies. It shall be made clear in the deliverable transmittal letter that certain graphics and images are supplied in hard copy only.

f. For all calculations in support of subcontract reports that are conducted in ASPEN+, an electronic copy of INPUT, REPORT and BACKUP (if Model Manager is used) must be submitted with all reports. Additionally, if costing or sizing calculations are conducted in a spreadsheet [no process calculations (heat and material balances) in spreadsheet format are permitted], a copy of the fully documented MS Excel file shall be supplied. Note that vendor quotes and other non-original material can be supplied in hard copy.

g. A fully executed release shall be supplied to NREL with all photographs, regardless of whether such photographs are delivered to NREL electronically or in hard copy. Such release shall certify that the National Renewable Energy Laboratory and the United States Government is granted a non-exclusive, paid-up, irrevocable, worldwide license to publish such photographs in any medium or reproduce such photographs or allow others to do so for United States Government purposes.

h. The Subcontractor may contact NREL Publication Services at (303) 275-3648 with questions regarding technical guidance concerning the submission of subcontract report deliverables as electronic files or exceptions to electronic files for graphics and images.

Deliverable Addresses - The Subcontractor shall clearly label all deliverables with the subcontractor name, NREL subcontract number, NREL Technical Monitor name, date, and the deliverable description (e.g., First Monthly Report, Draft Final Report). Deliverables shall be sent to the following addresses:

National Renewable Energy Laboratory
Attn: NREL Technical Monitor, MS ****
1617 Cole Blvd.
Golden, CO 80401
****Email Address

- One (1) master electronic version
- One (1) master printed copy, including graphics, and one copy

National Renewable Energy Laboratory
Attn: Jeff Soltesz, Subcontract Administrator, MS 1735
1617 Cole Blvd.
Golden, CO 80401
Jeffrey_Soltesz@nrel.gov

- One (1) master electronic version;
- One (1) printed copy, including graphics

NREL Publication Services, MS 1713
National Renewable Energy Laboratory
1617 Cole Blvd.
Golden, CO 80401
judy_hulstrom@nrel.gov

- One (1) master electronic version;
- One (1) master printed copy, including graphics

ATTACHMENT F
INDEX
TO
SUBCONTRACT SCHEDULE

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APPENDIX B	-	GENERAL TERMS AND CONDITIONS FOR SOLAR DECATHLON
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SAMPLE SUBCONTRACT NO. **

UNDER

PRIME CONTRACT NO. DE-AC36-99GO10337

CONTRACTING PARTY: MIDWEST RESEARCH INSTITUTE
NATIONAL RENEWABLE ENERGY LABORATORY
DIVISION

SUBCONTRACTOR: **

ADDRESS: **

SUBCONTRACT TITLE: "SOLAR DECATHLON 2007"

TYPE OF SUBCONTRACT: FIRM FIXED PRICE - PHASED

PERIOD OF PERFORMANCE: PHASE I: DATE OF EXECUTION THROUGH * MONTHS
PHASE II: COMPLETION OF PHASE I THROUGH **

SUBCONTRACT AMOUNT: AMOUNT

PHASE I: \$*
PHASE II: \$*
TOTAL PHASE: \$*

PAYMENT TERMS: NET *

SUBCONTRACTOR'S **
REMITTANCE NAME **
AND ADDRESS: **

FUNDED AMOUNT AND
TASK CHARGE NUMBER: \$*

SAMPLE SUBCONTRACT NO. **

BETWEEN

MIDWEST RESEARCH INSTITUTE

NATIONAL RENEWABLE ENERGY LABORATORY DIVISION

AND

**

SCHEDULE

INTRODUCTION

THIS SUBCONTRACT is effective upon execution by the Midwest Research Institute, National Renewable Energy Laboratory Division and is between the Midwest Research Institute, acting through its National Renewable Energy Laboratory Division (hereinafter called "NREL") and ** (hereinafter called "Subcontractor"), whose principal offices are located in **.

Midwest Research Institute has entered into Contract No. DE-AC36-99GO10337 (hereinafter called "Prime Contract") with the Department of Energy (hereinafter called "DOE"), an agency of the U.S. Government (hereinafter called "Government"), for the operation and management of the National Renewable Energy Laboratory.

This subcontract is entered into in furtherance of the performance of the work provided for in the Prime Contract.

AGREEMENT

NOW, THEREFORE, the parties hereto agree to the following terms and conditions:

ARTICLE 1 - THE WORK TO BE PERFORMED

- A. The Subcontractor shall perform the work generally described as "Solar Decathlon 2007", and specifically provided for in Appendix A, Statement of Work, attached hereto and made a part hereof, pursuant to the provisions of this subcontract.
- B. Specific deliverables, quantities, due dates, reporting requirements, and addresses are set forth in Appendix A hereto.

ARTICLE 2 - THE PERIOD OF PERFORMANCE

The period of performance for this Subcontract shall be as follows:

- Phase I: Date of Execution through ** (**) months
- Phase II: Completion of Phase I through ** (**) months

Each of these periods may be extended by mutual written agreements of the parties. NREL will make a

decision based on its sole judgment, whether or not to continue to fund each Phase prior to the completion date of each Phase. If all Phases are authorized by NREL, the total period of performance for the Subcontract agreement would be ** (**) months. If NREL should decide not to authorize a Phase, the Subcontract shall be considered complete upon submittal of the final deliverable during the preceding period.

ARTICLE 3 – PRICE, PAYMENT, AND LIMITATION OF PAYMENT OBLIGATION

- A. In full consideration of the Subcontractor's performance, hereunder, NREL shall pay the Subcontractor the prices stipulated in B below, less any deductions provided in this subcontract. This price is broken down as follows for Phase I and Phase II:

Phase I:	\$**
Phase II:	<u>\$**</u>
Total:	\$**

- B. Payments will be made by NREL upon receipt and acceptance of the deliverables, for which funds have been allotted and are available for payment, in the following specified amount:

<u>Occurrences</u>	<u>Amount</u>
<u>PHASE I:</u>	
1. Business /Fundraising Plan	\$*
2. Project Report #1	\$*
3. Final Energy Analysis and Economic Analysis	<u>\$*</u>
Total Phase I Price	\$*
<u>PHASE II:</u>	
4. Project Report #2	\$*
5. Project Report #3	\$*
6. House Operation in Solar Decathlon competition	\$*
7. Final Project Report	<u>\$*</u>
Total Phase II Price:	\$*
Total Phase I & Phase II Price:	\$*

Said payments shall be made after receipt of and acceptance by NREL of the specified deliverables above and upon submission by the Subcontractor of an invoice, in a form satisfactory to the Subcontract Administrator in accordance with the article entitled "Invoices"; provided, however, that said payments shall not be deemed to prejudice any rights which NREL may have by law or under other provisions of this subcontract.

- C. Pursuant to the article entitled "Limitation of Price and Subcontractor Obligations" of this Schedule, the amount of \$** has been allotted and is available for payment of the fixed payments numbered *** specified in Paragraph B above under this subcontract. The allotted amount will cover Tasks No. * (or Deliverable No. *) under Appendix A, Statement of Work, which tasks (or deliverables) shall be

completed on or before **.

ARTICLE 4 – LIMITATION OF PRICE AND SUBCONTRACTOR OBLIGATIONS

- A. Funds available for performance are described in Article 3 – Price, Payment, and Limitation of Payment Obligations. The amount of funds available at award is not considered sufficient for the performance required for any tasks under Appendix A, Statement of Work other than the deliverables specified in Article 3 – Price, Payment, and Limitation of Payment Obligations. When additional funds are available for the subcontract, NREL shall so notify the Subcontractor in writing. NREL shall also modify the amount of funds described in Article 3, Paragraph C as available for subcontract performance.
- B. NREL is not obligated to the Subcontractor for any amount over that described in Article 3, Paragraph C as available for subcontract performance.
- C. The Subcontractor is not obligated to incur costs for the performance required for effort associated with deliverables not designated as being covered by the available funds unless and until written notification is received from the Subcontract Administrator of an increase in availability of funds. If so notified, the Subcontractor's obligation shall increase only to the extent subcontract performance is required for the additional deliverables for which funds are made available.
- D. If this subcontract is terminated under the "Termination for Convenience of NREL" clause, "total subcontract price" in that clause means the amount available for performance of this subcontract, as in Paragraph A above, plus any amount established as the cancellation ceiling. "Work under the subcontract" in that clause means the work under deliverable requirements for which funds have been made available. If the subcontract is terminated for default, NREL's rights under this subcontract shall apply to the entire requirement.
- E. Notification to the Subcontractor of an increase or a decrease in the funds available for performance of this subcontract under another article or clause (e.g. an "Option" or "Changes" clause) shall not constitute the notification contemplated by Paragraph A of this article.

ARTICLE 5 - APPLICABLE DOCUMENTATION

In addition to the terms and conditions contained in this Schedule, the following documents are attached hereto and made a part of this subcontract:

- A. Appendix A, entitled "Statement of Work" dated **.
- B. Appendix B, entitled "General Terms and Conditions for Solar Decathlon" dated 09/21/05.
- C. Appendix C-2, entitled "Intellectual Property Provisions" dated 10/22/98
- D. Subcontractor's technical proposal number (none) dated **/**/, together with any revisions, is hereby incorporated by reference. In the event there is a conflict between the Subcontractor's technical proposal and any other provisions of this subcontract, the latter shall prevail.

ARTICLE 6 - ORDER OF PRECEDENCE

Any inconsistency in this subcontract, shall be resolved by giving precedence in the following order:

- A. This Schedule;
- B. Statement of Work (Appendix A);
- C. General Terms and Conditions for Solar Decathlon (Appendix B);
- D. Intellectual Property Provisions (Appendix C-2)
- E. Other provisions of this subcontract whether incorporated by reference or otherwise and
- F. The Subcontractor's technical proposal, if incorporated in this subcontract by reference or otherwise.

ARTICLE 7 - RIGHTS TO PROPOSAL DATA

- A. Except for technical data contained on the pages identified below (none) of the subcontractor's proposal dated **/**/** which are asserted by the Subcontractor as being proprietary data, it is agreed that, as a condition of the award of this subcontract, and notwithstanding the provisions of any notice appearing on the proposal, the Government and NREL shall have the right to use, duplicate, disclose and have others do so for any purpose whatsoever, the technical data contained in the proposal upon which this subcontract is based.

ARTICLE 8 - SUBCONTRACT ADMINISTRATION RESPONSIBILITIES

- A. Signature Authority: This subcontract may only be modified by a formal modification signed by an authorized official of NREL.
- B. Subcontract Administration Responsibilities: The authorized official of NREL has designated ** as the Subcontract Administrator for this subcontract with the responsibilities for subcontract administration and negotiation of any modifications to this subcontract. The Subcontract Administrator's telephone number is 303-****.
- C. Technical Monitoring Responsibilities: The authorized official of NREL has designated ** as the Technical Monitor for this subcontract with the responsibilities of monitoring the technical work or services to be performed under this subcontract. The Technical Monitor does not have the authority to make any commitments or authorize any changes which may affect the subcontract's price, scope of work, terms, or conditions. Any such changes shall be referred to the Subcontract Administrator designated in Paragraph B above. The Technical Monitor's telephone number is 303-****.

ARTICLE 9 - KEY PERSONNEL

- A. It having been determined that the individuals, whose names appear below, are necessary for the successful performance of this subcontract, the Subcontractor agrees to assign or have assigned such individuals to the performance of the work under this subcontract and shall not reassign or remove any of them without the consent of the Subcontract Administrator by modification to this subcontract:

Name	Project Title	Telephone No.
**	**	**

- B. Whenever, for any reason, one or more of the designated key personnel designated above, is unavailable for assignment for work under this subcontract, the Subcontractor shall, with the approval of the Subcontract Administrator, replace such individual with an individual of substantially equal abilities and qualifications.

ARTICLE 10 - INVOICES

Invoices for work accomplished under this subcontract shall be submitted in an original and one copy to:

National Renewable Energy Laboratory
Attn: **
1617 Cole Boulevard, (MS2713)
Golden, CO 80401-3393

To facilitate processing and payment each invoice shall include as applicable the following: (1) the date of the invoice, (2) the subcontract number which appears on the cover sheet of this subcontract, (3) the occurrence number associated with the requested payment as contained in Article 3 or a description of the supplies, or services covered by the invoice; and (4) any other information or documentation required by other provisions of this subcontract.

Payments under this subcontract shall be made in accordance with the payment terms and to the Subcontractor's remittance name and address shown on the cover sheet of this subcontract. Final payment under this subcontract shall be made upon receipt of any required patent clearance from DOE.

The payment terms of this subcontract shall mean net days from the date of receipt of an acceptable invoice or the date of receipt and acceptance of all deliverables, reporting requirements or closeout documentation covered by the invoice, whichever is later.

The Subcontractor shall submit its invoices in reasonable detail in accordance with the payment scheduled contained in the Article 3 showing the total fixed price invoiced both currently and cumulatively. An authorized representative of the Subcontractor shall sign the following certification on each invoice submitted for payment:

"I certify that this invoice is correct and proper for payment, and payment for this amount has not and will not be received under any other Government contract or subcontract or other source of

Government funds.

Authorized Official

Date"

The Subcontractor is hereby notified that NREL may withhold payment on invoices submitted, if the Subcontractor has failed to comply with or is delinquent in the submission of the reporting or deliverable requirements under this subcontract associated with the fixed price payment, until such time as the Subcontractor has complied or submitted such reporting or deliverable requirement.

ARTICLE 11 – PUBLICITY RELEASE AND PUBLIC AFFAIRS

- A. Publicity release of any nature in connection with this subcontract shall be coordinated as provided in the “Public Affairs” clause of Appendix B. The Subcontractor shall not make without prior review and approval of the NREL Subcontract Administrator, any publicity release of any nature of general, non-technical information in connection with this subcontract. For purposes of this subcontract, general, non-technical information means any information concerning the existence of the subcontract, the identity of the parties, and the scope and general character of the research or technical activity. As used in this Article, “publicity release” does not include a lawful inspection of the Subcontractor’s records conducted pursuant to Federal or State public records access statutes. The Subcontractor may report specifics regarding the formation and execution of this subcontract in its internal publications without prior review and approval of the NREL Subcontract Administrator.
- B. Data rights are set forth in Appendix C hereof.

ARTICLE 12 - INTEGRATION

This subcontract contains the entire understanding between the parties, and there are no understandings or representations except those set forth or incorporated by reference herein. No subsequent modifications of this subcontract shall be of any force or effect unless in writing signed by a duly authorized official of NREL.

IN WITNESS WHEREOF, the parties hereto have executed this subcontract as of the date fully signed below.

ACCEPTED: **

AUTHORIZED: MIDWEST RESEARCH INSTITUTE
NATIONAL RENEWABLE ENERGY LABORATORY
DIVISION

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

ATTACHMENT G

APPENDIX B

**GENERAL TERMS AND CONDITIONS FOR
SOLAR DECATHLON (SPECIAL)**

9/21/2005

APPENDIX B INDEX

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CLAUSES

CLAUSE 1 - PROHIBITION OF ASSIGNMENT OR TRANSFER (SPECIAL) (MAY 2002)

- A. Except as expressly authorized in writing by the NREL Subcontract Administrator, this subcontract or any interest therein or claim under this subcontract shall not be assigned or transferred by the Subcontractor.
- B. In the event of any authorization of assignment or transfer, the parties shall file written notice together with a true copy of the instrument of the assignment or transfer with the NREL Subcontract Administrator. Such assignment or transfer shall cover all amounts payable under the subcontract not already paid, shall not be made to more than one party, and shall not be subject to further assignment or transfers.
- C. When directed by DOE, the NREL Division of Midwest Research Institute may assign or transfer all its rights and obligations under this subcontract to DOE or its designee.

CLAUSE 2 - DISPUTES (SPECIAL-STATE EDUCATIONAL INSTITUTION) (MAY 2003)

- A. It is NREL's policy to try to resolve all contractual issues by mutual agreement at the NREL Subcontract Administrator's level, without litigation. Both parties hereby agree to explore all reasonable avenues for a negotiated settlement in order to avoid disputes. When all possibilities for negotiation have failed, the parties will endeavor to move the potential dispute to Alternative Dispute Resolution (ADR). Either party is required to provide a written explanation to the other party for rejecting a request for ADR proceedings, citing the specific reasons that ADR procedures are inappropriate for resolution of the dispute. If the parties are unable to satisfactorily resolve the dispute using ADR or cannot agree on its application, they resume the formal process authorized in this clause.
- B. The parties agree that the appropriate forum for resolution of any dispute or claim pertaining to this subcontract shall be a court of competent jurisdiction as follows:
 - 1. Subject to paragraph (B)(2) of this clause, any such litigation shall be brought and prosecuted exclusively in Federal District Court.
 - 2. Provided, however, that in the event that the requirements for jurisdiction in any Federal District Court are not present, such litigation shall be brought in a State court of competent jurisdiction.
- C. Any substantive issue of law in such dispute, claim, or litigation shall be determined in accordance with the body of applicable Federal law relating to the interpretation and application of clauses derived from Federal Acquisition Regulations and the Department of Energy Acquisition Regulations that implement and supplement the FAR. If there is no applicable Federal law, the law of the forum State shall apply in the determination of such issues. Conflict of law provisions shall not determine applicable governing law. Nothing in this clause shall grant to the Subcontractor by implication any statutory rights or remedies not expressly set forth in this subcontract.
- D. There shall be no interruption in the prosecution of the work, and the Subcontractor shall proceed diligently with the performance of this subcontract pending final resolution of any dispute, claim, or litigation arising under or related to this subcontract between the parties hereto or between the Subcontractor and lower-tier subcontractors or suppliers.

- E. The Contract Disputes Act of 1978 (41 U.S.C. Sections 601-613) shall not apply to this subcontract; provided, however, that nothing in this clause shall prohibit NREL, in its sole discretion, from sponsoring a claim of the Subcontractor for resolution under the provision of its prime contract with DOE. In the event that NREL so sponsors a claim at the request of the Subcontractor, the Subcontractor shall be bound by the decision of the cognizant DOE Contracting Officer to the same extent and in the same manner as NREL.
- F. Any disputes relative to intellectual property matters will be governed by other provisions of this subcontract.

CLAUSE 3 - DEFINITIONS (MAR 2001)

Derived from FAR 52.202-1 as modified by DEAR 902.200 (DEC 2000))

- A. AHead of the Agency@ means the Secretary, Deputy Secretary, or Under Secretary of the Department of Energy.
- B. ACommercial component@ means any component that is a commercial item.
- C. ACommercial item@ means--
 - 1. Any item, other than real property, that is of a type customarily used for non-governmental purposes and that--
 - (i) Has been sold, leased, or licensed to the general public; or
 - (ii) Has been offered for sale, lease, or license to the general public;
 - 2. Any item that evolved from an item described in paragraph (C)(1) of this clause through advances in technology or performance and that is not yet available in the commercial marketplace, but will be available in the commercial marketplace in time to satisfy the delivery requirements under a Government solicitation;
 - 3. Any item that would satisfy a criterion expressed in paragraphs C (1) or C (2) of this clause, but for--
 - (i) Modifications of a type customarily available in the commercial marketplace; or
 - (ii) Minor modifications of a type not customarily available in the commercial marketplace made to meet Federal Government requirements. AMinor@ modifications means modifications that do not significantly alter the non-governmental function or essential physical characteristics of an item or component, or change the purpose of a process. Factors to be considered in determining whether a modification is minor include the value and size of the modification and the comparative value and size of the final product. Dollar values and percentages may be used as guideposts, but are not conclusive evidence that a modification is minor;
 - 4. Any combination of items meeting the requirements of paragraphs (C) (1), (2), (3), or (5) of this clause that are of a type customarily combined and sold in combination to the general public;
 - 5. Installation services, maintenance services, repair services, training services, and other services if such services are procured for support of an item referred to in paragraphs (C) (1), (2), (3), or (4) of this clause, and if the source of such services--
 - (i) Offers such services to the general public and the Federal Government contemporaneously and under similar terms and conditions; and
 - (ii) Offers to use the same work force for providing the Federal Government with such services as the source uses for providing such services to the general public;

Services of a type offered and sold competitively in substantial quantities in the commercial marketplace based on established catalog or market prices for specific tasks performed under standard commercial terms and conditions. This does not include services that are sold based on hourly rates without an established catalog or market price for a specific service performed;

Any item, combination of items, or service referred to in subparagraphs (C)(1) through (C)(5), notwithstanding the fact that the item, combination of items, or service is transferred between or among separate divisions, subsidiaries, or affiliates of a subcontractor; or

A non-developmental item, if the procuring agency determines the item was developed exclusively at private expense and sold in substantial quantities, on a competitive basis, to multiple State and local Governments.

- D. AComponent@ means any item supplied to the Federal Government as part of an end item or of another component, except that for use in FAR clauses derived from 52.225-9, and 52.225-11 see the definitions in 52.225-9(a) and 52.225.11(a).
- E. ADOE Contracting Officer@ means a person with the authority to enter into, administer, and/or terminate DOE prime contracts and make related determinations and findings with respect to subcontracts issued pursuant to the DOE prime contract. The term includes certain authorized representatives of the DOE Contracting Officer acting within the limits of their authority as delegated by the DOE Contracting Officer.
- F. ANREL Subcontract Administrator@ means a person with the authority to enter into, administer, and/or terminate subcontracts and make related determinations and findings. The term includes certain authorized representatives of the NREL Subcontract Administrator acting within the limits of their authority as delegated by the NREL Contracts and Business Services Director.
- G. ANon-developmental item@ means--
 - Any previously developed item of supply used exclusively for governmental purposes by a Federal agency, a State or local government, or a foreign government with which the United States has a mutual defense cooperation agreement;
 - 2. Any item described in paragraph (G)(1) of this definition that requires only minor modification or modifications of a type customarily available in the commercial marketplace in order to meet the requirements of the procuring department or agency; or
 - 3. Any item of supply being produced that does not meet the requirements of paragraph (F)(1) or (G)(2) solely because the item is not yet in use.
- H. Except as otherwise provided in this subcontract, the term Asubcontracts@ includes, but is not limited to, lower-tier subcontracts and changes and modifications to lower-tier subcontracts and purchase orders and changes and modifications to purchase orders under this subcontract.
- I. The term ADOE@ means the Department of Energy.
- J. AContractor@ or ADOE Prime Contractor@ means Midwest Research Institute. The term ANREL@ means the National Renewable Energy Laboratory Division of the Midwest Research Institute, a not-for-profit Missouri Corporation, and includes the successors and assigns of the NREL Division of Midwest Research Institute. NREL facility is a Department of Energy-owned national laboratory, operated and managed under Contract No. DE-AC36-99-GO10337 by the NREL Division of the Midwest Research Institute.
- K. The term ADOE Directive@ means DOE Orders and Notices, modifications thereto, and other forms of directives, including for purposes of this subcontract those portions of DOE=s accounting and procedures handbook applicable to integrated Contractors, issued by DOE. The term does not include temporary written instructions by the DOE Contracting Officer or the NREL Subcontract Administrator for the purpose of addressing short-term or urgent DOE and NREL concerns relating to health, safety, or the environment.

CLAUSE 4 - STOP WORK ORDER (AUG 1989)

Derived from FAR 52.242-15

- A. The NREL Subcontract Administrator may, at any time, by written order to the Subcontractor, require the Subcontractor to stop all, or any part, of the work called for by this subcontract for a period of ninety (90) days after the order is delivered to the Subcontractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Subcontractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs allocable to the work covered by the order during the period of work stoppage. Within a period of ninety (90) days after a stop-work is delivered to the Subcontractor, or within any extension of that period to which the parties shall have agreed, the NREL Subcontract Administrator shall either --
1. Cancel the stop-work order; or
 2. Terminate the work covered by the order as provided in the Default or the Termination clause of this subcontract.
- B. If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Subcontractor shall resume work. The NREL Subcontract Administrator shall make an equitable adjustment and the subcontract shall be modified, in writing, accordingly, if --
1. The stop-work order results in an increase in the time required for, or in the Subcontractor's cost properly allocable to, the performance of any part of this subcontract; and
 2. The Subcontractor asserts its right to the adjustment within thirty (30) days after the end of the period of work stoppage; provided, that, if the NREL Subcontract Administrator decides the facts justify the action, the NREL Subcontract Administrator may receive and act upon the claim submitted at any time before final payment under this subcontract.
- C. If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of NREL/Government, the NREL Subcontract Administrator shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.
- D. If a stop-work order is not canceled and the work covered by the order is terminated for default, the NREL Subcontract Administrator shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

**CLAUSE 5 - CHANGES -- FIXED PRICE (AUG. 1987) INCORPORATING ALTERNATE II
(APR 1984)**

Derived from FAR 52-243-1

1. The NREL Subcontract Administrator may at any time, by written order, and without notice to the sureties, if any, make changes within the general scope of this subcontract in any one or more of the following:
 1. Description of services to be performed.
 2. Time of performance (i.e., hours of the day, days of the week, etc.).
 3. Place of performance of the services.
 4. Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for NREL/Government, in accordance with the drawings, designs, or specifications.
 5. Method of shipment or packing of supplies.
 6. Place of delivery.
2. If any such change causes an increase or decrease in the cost of, or the time required for, performance of any part of the work under this subcontract, whether or not changed by the order, the NREL Subcontract Administrator shall make an equitable adjustment in the contract price, the delivery schedule, or both, and shall modify the subcontract.
3. The Subcontractor must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order. However, if the NREL Subcontract Administrator decides that the facts justify it, the NREL Subcontract Administrator may receive and act upon a proposal submitted before final payment of the contract.
4. If the Subcontractor's proposal includes the cost of property made obsolete or excess by the change, the NREL Subcontract Administrator shall have the right to prescribe the manner of the disposition of the property.
5. Failure to agree to any adjustment shall be a dispute under the Disputes clause. However, nothing in this clause shall excuse the Subcontractor from proceeding with the contract as changed.

**CLAUSE 6 - GOVERNMENT PROPERTY - (FIXED PRICE SUBCONTRACTS) (DEC 1989)
INCORPORATING ALTERNATE II (JULY 1985)**

Derived from FAR 52.245-2

A. Government-furnished property.

1. NREL shall deliver to the Subcontractor, for use in connection with and under the terms of this subcontract, the Government-furnished property described in the Schedule or specifications together with any related data and information that the Subcontractor may request and is reasonably required for the intended use of the property (hereinafter referred to as "Government-furnished property").
2. The delivery or performance dates for this subcontract are based upon the expectation that Government-furnished property suitable for use (except for property furnished "as-is") will be delivered to the Subcontractor at the times stated in the Schedule or, if not so stated, in sufficient time to enable the Subcontractor to meet the subcontract's delivery or performance dates.
3. If Government-furnished property is received by the Subcontractor in a condition not suitable for the intended use, the Subcontractor shall, upon receipt of it, notify the NREL Subcontract Administrator, detailing the facts, and, as directed by the NREL Subcontract Administrator and at NREL expense, either repair, modify, return, or otherwise dispose of the property. After completing the directed action and upon written request of the Subcontractor, the NREL Subcontract Administrator shall make an equitable adjustment as provided in paragraph (H) of this clause.
4. If Government-furnished property is not delivered to the Subcontractor by the required time, the NREL Subcontract Administrator shall, upon the Subcontractor's timely written request, make a determination of the delay, if any, caused the Subcontractor and shall make an equitable adjustment in accordance with paragraph (H) of this clause.

B. Changes in Government-furnished property.

1. The NREL Subcontract Administrator may, by written notice,
 - (i) Decrease the Government-furnished property provided or to be provided under this subcontract, or
 - (ii) Substitute other Government-furnished property for the property to be provided by NREL, or to be acquired by the Subcontractor, under this subcontract. The Subcontractor shall promptly take such action as the NREL Subcontract Administrator may direct regarding the removal, shipment, or disposal of the property covered by such notice.
2. Upon the Subcontractor's written request, the NREL Subcontract Administrator shall make an equitable adjustment to the subcontract in accordance with paragraph (H) of this clause, if NREL has agreed in the Schedule to make the property available for performing this subcontract and there is any --
 - (i) Decrease or substitution in this property pursuant to subparagraph (B)(1) of this clause; or

- (ii) Withdrawal of authority to use this property, if provided under any other subcontract or lease.

C. Title in Government property.

1. The Government shall retain title to all Government-furnished property.
2. All Government-furnished property and all property acquired by the Subcontractor, title to which vests in the Government under this paragraph (collectively referred to as "Government property"), are subject to the provisions of this clause. Title to Government property shall not be affected by its incorporation into or attachment to any property not owned by the Government, nor shall Government property become a fixture or lose its identity as personal property by being attached to any real property.
3. Title to each item of facilities, special test equipment, and special tooling (other than that subject to a special tooling clause) acquired by the Subcontractor for the Government under this subcontract shall pass to and vest in the Government when its use in performing this subcontract commences, or when NREL/Government has paid for it, whichever is earlier, whether or not title previously vested in the Government.
4. Title to equipment (and other tangible personal property) purchased with funds available for research and having an acquisition cost of less than \$5,000 shall vest in the Subcontractor upon acquisition or as soon thereafter as feasible; provided, that the Subcontractor obtained the NREL Subcontract Administrator's approval before each acquisition. Title to equipment purchased with funds available for research and having an acquisition cost of \$5,000 or more shall vest as set forth in the subcontract. If title to equipment vests in the Subcontractor under this subparagraph (C)(4), the Subcontractor agrees that no charge will be made to the Government for any depreciation, amortization, or use under any existing or future Government subcontract or lower-tier subcontract thereunder. The Subcontractor shall furnish the NREL Subcontract Administrator a list of all equipment to which title is vested in the Subcontractor under this subparagraph (C)(4) within ten (10) days following the end of the calendar quarter during which it was received.
5. Vesting title under this paragraph (C) is subject to civil rights legislation, 42 U.S.C.2000d. Before title is vested any by signing this subcontract, the Subcontractor accepts and agrees that --

"No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under this contemplated financial assistance (title to equipment)."

D. Use of Government property.

1. The Government property shall be used only for performing this subcontract, unless otherwise provided in this subcontract or approved by the NREL Subcontract Administrator.

E. Property administration.

1. The Subcontractor shall be responsible and accountable for all Government property provided under this subcontract and shall comply with Federal Acquisition Regulation (FAR) Subpart 45.5, as in effect on the date of this subcontract.
2. The Subcontractor shall establish and maintain a program for the use, maintenance, repair, protection, and preservation of Government property in accordance with sound industrial practice and the applicable provisions of Subpart 45.5 of the FAR.
3. If damage occurs to Government property, the risk of which has been assumed by the Government, under this subcontract, NREL shall replace the items or the Subcontractor shall make such repairs as NREL directs. However, if the Subcontractor cannot effect such repairs within the time required, the Subcontractor shall dispose of the property as directed by the NREL Subcontract Administrator. When any property for which NREL is responsible is replaced or repaired, the NREL Subcontract Administrator shall make an equitable adjustment in accordance with paragraph (H) of this clause.
4. The Subcontractor represents that the subcontract price does not include any amount for repairs or replacement for which NREL is responsible. Repair or replacement of property for which the Subcontractor is responsible shall be accomplished by the Subcontractor at its own expense.

F. Access.

NREL/Government and all their designees shall have access at all reasonable times to the premises in which any Government property is located for the purpose of inspecting the Government property.

G. Limited risk of loss.

1. The term "Subcontractor's managerial personnel," as used in this paragraph (G), means the Subcontractor's directors, officers, and any of the Subcontractor's managers, superintendents, or equivalent representatives who have supervision or direction of --
 - (i) All or substantially all of the Subcontractor's business;
 - (ii) All or substantially all of the Subcontractor's operation at any one plant, laboratory, or separate location at which the subcontract is being performed; or
 - (iii) A separate and complete major industrial operation connected with performing this subcontract.
2. The Subcontractor shall not be liable for loss or destruction of, or damage to, the Government property provided under this subcontract (or, if an educational or nonprofit organization, for expenses incidental to such loss, destruction, or damage), except as provided in subparagraphs (3) and (4) below.
3. The Subcontractor shall be responsible for loss or destruction of, or damage to, the Government property provided under this subcontract (including expenses incidental to such loss, destruction, or damage) --
 - (i) That results from a risk expressly required to be insured under this subcontract,

but only to the extent of the insurance required to be purchased and maintained, or to the extent of insurance actually purchased and maintained, whichever is greater;

- (ii) That results from a risk which is in fact covered by insurance or for which the Subcontractor is otherwise reimbursed, but only to the extent of such insurance or reimbursement.
 - (iii) For which the Subcontractor is otherwise responsible under the express terms of this subcontract;
 - (iv) That results from willful misconduct or lack of good faith on the part of the Subcontractor's managerial personnel; or
 - (v) That results from a failure on the part of the Subcontractor, due to willful misconduct or lack of good faith on the part of the Subcontractor's managerial personnel, to establish and administer a program or system for the control, use, protection, preservation, maintenance, and repair of Government property as required by paragraph (E) of this clause.
4. (i) If the Subcontractor fails to act as provided in subdivision (G)(3)(v) above, after being notified (by certified mail addressed to one of the Subcontractor's managerial personnel) of the Government's disapproval, withdrawal of approval, or nonacceptance of the system or program, it shall be conclusively presumed that such failure was due to willful misconduct or lack of good faith on the part of the Subcontractor's managerial personnel.
- (ii) Furthermore, any loss or destruction of, or damage to, the Government property shall be presumed to have resulted from such failure unless the Subcontractor can establish by clear and convincing evidence that such loss, destruction, or damage --
- a. Did not result from the Subcontractor's failure to maintain an approved program or system; or
 - b. Occurred while an approved program or system was maintained by the Subcontractor.
5. If the Subcontractor transfers Government property to the possession and control of a lower-tier subcontractor, the transfer shall not affect the liability of the Subcontractor for loss or destruction of, or damage to, the property as set forth above. However, the Subcontractor shall require the lower-tier subcontractor to assume the risk of, and be responsible for, any loss or destruction of, or damage, to the property while in the lower-tier subcontractor's possession or control, except to the extent that the Subcontractor, with the advance approval of the NREL Subcontract Administrator, relieves the lower-tier subcontractor from such liability. In the absence of such approval, the lower-tier subcontract shall contain appropriate provisions requiring the return of all Government property in as good condition as when received, except for reasonable wear and tear or for its use in accordance with the provisions of the prime subcontract.

6. Upon loss or destruction of, or damage to, Government property provided under this subcontract, the Subcontractor shall so notify the NREL Subcontract Administrator and shall communicate with the loss and salvage organization, if any, designated by the NREL Subcontract Administrator. With the assistance of any such organization, the Subcontractor shall take all reasonable action to protect the Government property from further damage, separate the damaged and undamaged Government property, put all the affected Government property in the best possible order, and furnish to the NREL Subcontract Administrator a statement of --
 - (i) The lost, destroyed, or damaged Government property;
 - (ii) The time and origin of the loss, destruction, or damage;
 - (iii) All known interests in commingled property of which the Government property is a part; and
 - (iv) The insurance, if any, covering any part of or interest in such commingled property.
7. The Subcontractor shall repair, renovate, and take such other action with respect to damaged Government property as the NREL Subcontract Administrator directs. If the Government property is destroyed or damaged beyond practical repair, or is damaged and so commingled or combined with property of others (including the Subcontractor's) that separation is impractical, the Subcontractor may, with the approval of and subject to any conditions imposed by the NREL Subcontract Administrator, sell such property for the account of the Government. Such sales may be made in order to minimize the loss to the Government, to permit the resumption of business, or to accomplish a similar purpose. The Subcontractor shall be entitled to an equitable adjustment in the subcontract price for the expenditures made in performing the obligations under this subparagraph (G)(7) in accordance with paragraph (H) of this clause. However, the Government may directly reimburse the loss and salvage organization for any of their charges. The NREL Subcontract Administrator shall give due regard to the Subcontractor's liability under this paragraph (G) when making any such equitable adjustment.
8. The Subcontractor represents that it is not including in the price, and agrees it will not hereafter include in any price to the Government, any charge or reserve for insurance (including any self-insurance fund or reserve) covering loss or destruction of, or damage to, Government property, except to the extent that the Government may have expressly required the Subcontractor to carry such insurance under another provision of this subcontract.
9. In the event the Subcontractor is reimbursed or otherwise compensated for any loss or destruction of, or damage to, the Government property, the Subcontractor shall use the proceeds to repair, renovate, or replace the lost, destroyed, or damaged Government property or shall otherwise credit the proceeds to or equitably reimburse the Government, as directed by the NREL Subcontract Administrator.
10. The Subcontractor shall do nothing to prejudice the Government's rights to recover against third parties for any loss or destruction of, or damage to, Government property. Upon the request of the NREL Subcontract Administrator, the Subcontractor shall, at the Government's expense, furnish to the Government all reasonable assistance and cooperation (including the prosecution of suit and the execution of instruments of

assignment in favor of the Government) in obtaining recovery. In addition, where a lower-tier subcontractor has not been relieved from liability for any loss or destruction of, or damage to, Government property, the Subcontractor shall enforce for the benefit of the Government the liability of the lower-tier subcontractor for such loss, destruction, or damage.

H. Equitable adjustment.

When this clause specifies an equitable adjustment, it shall be made to any affected subcontract provision in accordance with the procedures of the Changes clause. When appropriate, the NREL Subcontract Administrator may initiate an equitable adjustment in favor of NREL. The right to an equitable adjustment shall be the NREL Subcontract Administrator's exclusive remedy. NREL/Government shall not be liable to suit for breach of contract for --

1. Any delay in delivery of Government-furnished property;
2. Delivery of Government-furnished property in a condition not suitable for its intended use;
3. A decrease in or substitution of Government-furnished property; or
4. Failure to repair or replace Government property for which NREL is responsible.

I. Final accounting and disposition of Government property.

Upon completing this subcontract, or at such earlier dates as may be fixed by the NREL Subcontract Administrator, the Subcontractor shall submit, in a form acceptable to the NREL Subcontract Administrator, inventory schedules covering all items of Government property (including any resulting scrap) not consumed in performing this subcontract or delivered to NREL. The Subcontractor shall prepare for shipment, deliver f.o.b. origin, or dispose of the Government property as may be directed or authorized by the NREL Subcontract Administrator. The net proceeds of any such disposal shall be credited to the subcontract price or shall be paid to NREL/Government as the NREL Subcontract Administrator directs.

J. Abandonment and restoration of Subcontractor's premises.

Unless otherwise provided herein, NREL --

1. May abandon any Government property in place, at which time all obligations of NREL/Government regarding such abandoned property shall cease; and
2. Has no obligation to restore or rehabilitate the Subcontractor's premises under any circumstances (e.g., abandonment, disposition upon completion of need, or upon subcontract completion). However, if the Government-furnished property (listed in the Schedule or specifications) is withdrawn or is unsuitable for the intended use, or if any Government property is substituted, then the equitable adjustment under paragraph (H) of this clause may properly include restoration or rehabilitation costs.

K. Communications.

All communications under this clause shall be in writing.

L. Overseas contracts.

If this subcontract is to be performed outside of the United States of America, its territories, or possessions, the words "Government" and "Government-furnished" (whenever they appear in this clause) shall be construed as "United States Government" and "United States Government-furnished," respectively.

**CLAUSE 7 - TERMINATION FOR CONVENIENCE OF NREL/GOVERNMENT FIXED PRICE)
(SHORT FORM) (APR 1984)**

Derived from FAR 52.249-1

The NREL Subcontract Administrator, by written notice, may terminate this subcontract, in whole or in part, when it is in NREL/Government's interest. If this subcontract is terminated, the rights, duties, and obligations of the parties, including compensation to the Subcontractor, shall be in accordance with Part 49 of the Federal Acquisition Regulation in effect on the date of this subcontract.

**CLAUSE 8 - INTEGRATION OF ENVIRONMENT, SAFETY, AND HEALTH INTO
WORK PLANNING AND EXECUTION (DEC 2000)**

Derived from DEAR 970.5223-1 (FD)

- A. For the purposes of this clause,
 - 1. Safety encompasses environment, safety and health, including pollution prevention and waste minimization; and
 - 2. Employees include lower-tier subcontractor employees.
- B. In performing work under this subcontract, the Subcontractor shall perform work safely, in a manner that ensures adequate protection for employees, the public, and the environment, and shall be accountable for the safe performance of work. The Subcontractor shall exercise a degree of care commensurate with the work and the associated hazards. The Subcontractor shall ensure that management of environment, safety and health (ES&H) functions and activities becomes an integral but visible part of the Subcontractor's work planning and execution processes. The Subcontractor shall, in the performance of work, ensure that:
 - 1. Line management is responsible for the protection of employees, the public, and the environment. Line management includes those Subcontractor and lower-tier subcontractor employees managing or supervising employees performing work.
 - 2. Clear and unambiguous lines of authority and responsibility for ensuring (ES&H) are established and maintained at all organizational levels.
 - 3. Personnel possess the experience, knowledge, skills, and abilities that are necessary to discharge their responsibilities.
 - 4. Resources are effectively allocated to address ES&H, programmatic, and operational considerations. Protecting employees, the public, and the environment is a priority whenever activities are planned and performed.
 - 5. Before work is performed, the associated hazards are evaluated and an agreed-upon set of ES&H standards and requirements are established which, if properly implemented, provide adequate assurance that employees, the public, and the environment are protected from adverse consequences.
 - 6. Administrative and engineering controls to prevent and mitigate hazards are tailored to the work being performed and associated hazards. Emphasis should be on designing the work and/or controls to reduce or eliminate the hazards and to prevent accidents and unplanned releases and exposures.

7. The conditions and requirements to be satisfied for operations to be initiated and conducted are established and agreed-upon by NREL/Government and the Subcontractor. These agreed-upon conditions and requirements are requirements of the subcontract and binding upon the Subcontractor. The extent of documentation and level of authority for agreement shall be tailored to the complexity and hazards associated with the work and shall be established in a Safety Management System.
- C. The Subcontractor shall manage and perform work in accordance with a documented Safety Management System (System) that fulfills all conditions in paragraph (B) of this clause at a minimum. Documentation of the System shall describe how the Subcontractor will:
 1. Define the scope of work;
 2. Identify and analyze hazards associated with the work;
 3. Develop and implement hazard controls;
 4. Perform work within controls; and
 5. Provide feedback on adequacy of controls and continue to improve safety management.
- D. The System shall describe how the Subcontractor will establish, document, and implement safety performance objectives, performance measures, and commitments in response to NREL/DOE program and budget execution guidance while maintaining the integrity of the System. The System shall also describe how the Subcontractor will measure system effectiveness.
- E. The Subcontractor shall submit to the NREL Subcontract Administrator documentation of its System for review and approval. Dates for submittal, discussions, and revisions to the System will be established by the NREL Subcontract Administrator. Guidance on the preparation, content, review, and approval of the System will be provided by the NREL Subcontract Administrator. On an annual basis, the Subcontractor shall review and update, for NREL=s approval, its safety performance objectives, performance measures, and commitments consistent with and in response to NREL/DOE program and budget execution guidance and direction. Resources shall be identified and allocated to meet the safety objectives and performance commitments as well as maintain the integrity of the entire System. Accordingly, the System shall be integrated with the Subcontractor's business processes for work planning, budgeting, authorization, execution, and change control.
- F. The Subcontractor shall comply with, and assist NREL/DOE in complying with, ES&H requirements of all applicable laws and regulations, and applicable directives identified in the clause of NREL=s Prime Contract entitled "Laws, Regulations, and DOE Directives." The Subcontractor shall cooperate with Federal and non-Federal agencies having jurisdiction over ES&H matters under this subcontract.
- G. The Subcontractor shall promptly evaluate and resolve any noncompliance with the ES&H requirements and the System. If the Subcontractor fails to provide resolution or f, at any time, the Subcontractor=s acts or failure to act causes substantial harm or an imminent danger to the environment or health and safety of employees or the public, the NREL Subcontract Administrator may issue an order stopping work in whole or in part. Any stop work order issued by the NREL Subcontract Administrator under this clause (or issued by the Subcontractor to a lower-tier subcontractor in accordance with paragraph (I) of this clause) shall be without prejudice to any other legal or contractual rights of NREL/Government. In the event that the NREL Subcontract Administrator issues a stop work order, an order authorizing the resumption of the work may be issued at the discretion of the NREL Subcontract Administrator. The Subcontractor shall not be entitled to an extension of time or additional fee or damages by reason of, or in connection with, any work stoppage ordered in accordance with this clause.
- H. Regardless of the performer of the work, the Subcontractor is responsible for compliance with the ES&H requirements applicable to this subcontract. The Subcontractor is responsible for flowing

down the ES&H requirements applicable to this subcontract to subcontracts at any tier to the extent necessary to ensure the Subcontractor's compliance with the requirements.

- I. The Subcontractor shall include a clause substantially the same as this clause in lower-tier subcontracts involving complex or hazardous work on site at a Government-owned or-leased facility. Such lower-tier subcontracts shall provide for the right to stop work under the conditions described in paragraph (G) of this clause. Depending on the complexity and hazards associated with the work, the Subcontractor may choose not to require the lower-tier subcontractor to submit a Safety Management System for the Subcontractor's review and approval.

CLAUSE 9 - ACCOUNTS, RECORDS, AND INSPECTION (DEC 2000)

Derived from DEAR 970.5232-3 (FD)

A. Accounts.

The Subcontractor shall maintain a separate and distinct set of accounts, records, documents, and other evidence showing and supporting: all allowable costs incurred or anticipated to be incurred; collections accruing to the Subcontractor in connection with the work under this subcontract, other applicable credits, negotiated fixed amounts, and fee accruals under this subcontract; and the receipt, use, and disposition of all Government property coming into the possession of the Subcontractor under this subcontract. The system of accounts employed by the Subcontractor shall be satisfactory to NREL/Government and in accordance with generally accepted accounting principles consistently applied.

B. Inspection and audit of accounts and records.

All books of account and records relating to this subcontract shall be subject to inspection and audit by NREL/Government or its designees in accordance with the provisions of the Clause, AAccess to and Ownership of Records@, at all reasonable times, before and during the period of retention provided for in paragraph (D) of this clause, and the Subcontractor shall afford NREL/Government proper facilities for such inspection and audit.

C. Audit of lower-tier subcontractors' records.

The Subcontractor also agrees, with respect to any lower-tier subcontracts (including fixed-price or unit-price lower-tier subcontracts or purchase orders) where, under the terms of the lower-tier subcontract, costs incurred are a factor in determining the amount payable to the subcontractor of any tier, to either conduct an audit of the lower-tier subcontractor's costs or arrange for such an audit to be performed by the cognizant government audit agency through the NREL Subcontract Administrator.

D. Disposition of records.

Except as agreed upon by the NREL/Government and the Subcontractor, all financial and cost reports, books of account and supporting documents, system files, data bases, and other data evidencing costs allowable, collections accruing to the Subcontractor in connection with the work under this subcontract, other applicable credits, and fee accruals under this subcontract, shall be the property of the Government, and shall be delivered to NREL/Government or otherwise disposed of by the Subcontractor either as the NREL Subcontract Administrator may from time to time direct during the progress of the work or, in any event, as the NREL Subcontract Administrator shall direct upon completion or termination of this subcontract and final audit of accounts hereunder. Except as otherwise provided in this subcontract, including provisions of the Clause, AAccess to and Ownership of Records@, all other records in the possession of the Subcontractor relating to this subcontract shall be preserved by the Subcontractor for a period of

three years after final payment under this subcontract or otherwise disposed of in such manner as may be agreed upon by the NREL/Government and the Subcontractor.

E. Reports.

The Subcontractor shall furnish such progress reports and schedules, financial and cost reports, and other reports concerning the work under this subcontract as the NREL Subcontract Administrator may from time to time require.

F. Inspections.

NREL/Government shall have the right to inspect the work and activities of the Subcontractor under this subcontract at such time and in such manner as it shall deem appropriate.

G. Lower-tier subcontracts.

The Subcontractor further agrees to require the inclusion of provisions similar to those in paragraphs (A) through (G) and paragraph (H) of this clause in all lower-tier subcontracts (including fixed price or unit-price subcontracts or purchase orders) of any tier entered into hereunder where, under the terms of the lower-tier subcontract, costs incurred are a factor in determining the amount payable to the lower-tier subcontractor. The Subcontractor further agrees to include an AAudit@ clause, the substance of which is the AAudit@ clause set forth at 48 CFR 52.215-2 in each lower-tier subcontract which does not include provisions similar to those in paragraph (A) through paragraph (G) and paragraph (H) of this clause, but which contains a Alower-tier subcontract defective cost or pricing data@ clause.

H. Comptroller General.

1. The Comptroller General of the United States, or an authorized representative, shall have access to and the right to examine any of the Subcontractor's directly pertinent records involving transactions related to this subcontract or a lower-tier subcontract hereunder.
2. This paragraph may not be construed to require the Subcontractor or lower-tier subcontractor to create or maintain any record that the Subcontractor or lower-tier subcontractor does not maintain in the ordinary course of business or pursuant to a provision of law.
3. Nothing in this subcontract shall be deemed to preclude an audit by the General Accounting Office of any transaction under this subcontract.

CLAUSE 10 - PERMITS AND RESPONSIBILITIES (NOV 1991)

Derived from FAR 52.236-7

The Subcontractor shall, without additional expense to NREL, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Subcontractor shall also be responsible for all damages to persons or property that occur as a result of the Subcontractor's fault or negligence. The Subcontractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the subcontract.

CLAUSE 11 - PUBLIC AFFAIRS - (DEC 2000)

Derived from DEAR 952.204-75

A. The Subcontractor must cooperate with NREL in releasing unclassified information to the public and news media regarding NREL/DOE policies, programs, and activities relating to its effort under the subcontract. The responsibilities under this clause must be accomplished through coordination with the NREL Subcontract Administrator and appropriate NREL public affairs personnel in accordance with procedures defined by the NREL Subcontract Administrator.

B. The Subcontractor is responsible for the development, planning, and coordination of proactive approaches for the timely dissemination of unclassified information regarding NREL/DOE activities onsite and offsite, including, but not limited to, operations and programs. Proactive public affairs programs may utilize a variety of communication media, including public workshops, meetings or hearings, open houses, newsletters, press releases, conferences, audio/visual presentations, speeches, forums, tours, and other appropriate stakeholder interactions.

C. The Subcontractor=s internal procedures must ensure that all releases of information to the public and news media are coordinated through, and approved by, a management official at an appropriate level within the Subcontractor=s organization.

D. The Subcontractor must comply with NREL/DOE procedures for obtaining advance clearances on oral, written, and audio/visual informational material prepared for public dissemination or use.

E. Unless prohibited by law, and in accordance with procedures defined by the NREL Subcontract Administrator, the Subcontractor must notify the NREL Subcontract Administrator and appropriate NREL public affairs personnel of communications or contacts with Members of Congress relating to the effort performed under the subcontract.

F. In accordance with procedures defined by the NREL Subcontract Administrator, the Subcontractor must notify the NREL Subcontract Administrator and appropriate NREL public affairs personnel of activities or situations that may attract regional or national news media attention and of non-routine inquiries from national news media relating to the effort performed under the subcontract.

G. In releases of information to the public and news media, the Subcontractor must fully and accurately identify the Subcontractor=s relationship to NREL/DOE and fully and accurately credit NREL/DOE for its role in funding programs and projects resulting in scientific, technical, and other achievements.

CLAUSE 12 - OTHER CONTRACTS OR SUBCONTRACTS - (APR 1984)

Derived from FAR 52.236-8

NREL/Government may undertake or award other contracts or subcontracts for additional work at or near the site of the work under this subcontract. The Subcontractor shall fully cooperate with the other contractors or subcontractors and with NREL/Government employees and shall carefully adapt scheduling and performing the work under this subcontract to accommodate the additional work, heeding any direction that may be provided by the NREL Subcontract Administrator. The Subcontractor shall not commit or permit any act that will interfere with the performance of work by any other contractor, subcontractor, or by NREL/Government employees.

CLAUSE 13 - CLEANING UP - (APR 1984)

Derived from FAR 52.236-12

The Subcontractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Subcontractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of NREL/Government. Upon completing the work, the Subcontractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the NREL Subcontract Administrator.